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ABSTRACT

The National Longitudinal Study of the High School Class of 1972 has completed two phases of data collection: the Base-Year and the First Follow-Up Surveys. This paper summarizes some of the findings from cross-sectional and longitudinal analyses of that data. A cross-sectional analysis of the base-year results yielded information on grades, work, factors interfering with study, job importance, extra-curricular activities, school evaluation, high school counseling services, study plans, financial aid plans, choice of college, and locus of control. Results from the first follow-up survey dealt with activity status in The fall fo 1973, marriage and family planning, educational expectations, life goals, reasons for not continuing education, type of post Secondary institution, full-time versus part-time study, field of study, satisfaction with post secondary education, job satisfaciton, and relevancy of high school job training. A longitudinal analysis yielded data describing the relationship of plan fulfillment to ability, socioeconomic status, race, sex, high school program, and geographic region. A further analysis described the effects of these variables on activity state transitions, or differences between October 1972 and October 1973 actitives. A model for evaluating financial aid data is also presented. (SW)

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The National Longitudinal Study of the High School Class of 1972: Selected Results from the Base-Year and the First Follow-Up Surveys

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ABSTRACT

The National Longitudinal Study of the High School Class of 1972 has completed two phases of data collection: the Base-Year and the First Follow-Up Surveys. The data have been processed and partially analyzed. This paper summarizes some of the interesting findings from cross-sectional and longitudinal analyses. The major themes are the profiles of the class of 1972 in their senior year, their educational and vocational activity states in October 1973, plan fulfillment, and activity state transitions from October 1972 to October 1973. On-going analyses and future analysis plans are also discussed in this paper.

The National Longitudinal Study of the High School Class of 1972: Selected Results from the Base-Year and the First Follow-Up Surveys

In 1968 the National Center for Education Statistics (NCES) conducted a survey to determine the specific data needs of educational policymakers and researchers. Respondents to the survey expressed a need for data that would allow comparisons of student educational experiences with later outcomes. This finding provided the impetus for NCES to begin planning for the first of an intended series of National Longitudinal Studies of Educational Effects.

In April 1970, a number of prominent educational researchers and administrators met with interested Federal officials in Washington, D. C. The resulting National Longitudinal Study of the High School Class of 1972 (NLS) reflected their guidance and the interests of a number of USOE bureaus, including the Office of Planning, Budgeting, and Evaluation; the Bureau of Postsecondary Education; the Bureau of Occupational and Adult Education; the Bureau of Programs for the Handicapped; as well as the National Center for Education Statistics. Four advisory committees provided guidance in the planning and implementation of the survey. One committee was composed of research experts and representatives of various educational organizations; two others were made up of officials of state education agencies; and the fourth, an internal USOE users committee, represented the data needs of the various offices and bureaus of the U. S. Department of Health, Education, and Welfare (DHEW) and USOE.

The primary purpose of the NLS is to discover what happens to young people after they leave high school, as determined by their subsequent educational and vocational activities, plans, aspirations, and attitudes, and to relate this information to their prior educational experiences as well as personal and biographical characteristics. Ultimately, the study will help to gain a better understanding of the development of students as they pass through the American educational system, and of

the complexity of factors associated with the students' educational and career outcomes. Such information is essential as a basis for effective planning, implementation, and evalaution of Federal policies and programs designed to enhance educational opportunity and achievement and to upgrade occupational attainments and career outcomes.

Following a rather extensive period of planning, which included the design and field test of survey instrumentation and procedures, the full-scale survey was initiated in the spring of 1972. A national probability sample of about 18,000 seniors from over 1,000 public, private, and church-affiliated high schools participated in the Base-Year Survey.

The first follow-up data collection began in October 1973 and was completed about March 1974. Its primary purpose was to obtain information about the participants' basic educational and work activities one and one-half years after high school graduation, and their continuing or revised plans, aspirations, and attitudes. Added to the base-year participants were 1972 graduates from about 250 additional schools which had been unable to participate, bringing the total sample up to about 22,000.

Current planning calls for three more follow-up surveys under the NLS program over the next four to six years. The Second Follow-Up Survey began in October 1974 and is currently in progress. Also underway is the design of a new cohort study, the NLS of the High School Class of 1978. The broad data base accumulated over time will fill a widespread need on the part of educational researchers and administrators for information on the flow of young adults through the postsecondary occupational-educational system. It will provide insight into identifying and understanding the major branching or decision points that affect the educational and life patterns of individuals in the period following secondary school. Important linkages or path choices can be traced, estimates of the associated transition probabilities provided, and insight afforded into the relative importance of the factors which determine or otherwise affect these transition probabilities.

The Base-Year and the First Follow-Up Survey data have been processed and partially analyzed. This paper summarizes some of the preliminary findings from several longitudinal and cross-sectional analyses. The central themes are primarily the description of the class of 1972 in their senior year, educational and vocational activities in October 1973, plan fulfillment and activity-state transition from October 1972 to October 1973. The on-going analyses and future analysis plans are also discussed in this paper.

METHOD

A. The Sample

The sample design may be described as a deeply stratified two-stage probability sample with schools as first-stage sampling units and students as second-stage units. The population consisted of all 1972 twelfth graders enrolled in all public and private schools in the 50 states and the District of Columbia. The first-stage sampling frame was constructed from computerized school files maintained by the Office of Education and by the National Catholic Education Association.

The school sampling frame was stratified into 600 final strata based on the following variables:

- Type of control (public or non-public)
- Geographic region (Northeast, North Central, South, and West)
- Grade 12 enrollment (less than 300, 300 to 599, and 600 or more)
- Proximity to institutions of higher learning
- Percent minority group enrollment
- Income level of the community
- Degree of urbanization.

In order to increase the number of disadvantaged students in the sample, schools located in low-income areas and schools with high proportions of minority group enrollments were sampled at approximately twice the sampling rate used for the remaining schools. Schools in the smallest grade 12 enrollment strata (less than 300 seniors) were selected with probabilities proportional to their estimated numbers of senior students

and without replacement. Schools in the remaining strata were selected with equal probabilities and without replacement. Within each final stratum, four schools were selected and designated as the primary selections. The other two schools were retained as back-up or substitute selections, used in the sample only if one or both of the primary schools did not cooperate. Samples of 18 students per school were selected and five additional students were selected as alternates. The students were sampled with equal probabilities and without replacement, within schools.

The sample design involved 1,200 primary sample schools and 21,600 students (18 per school). Of the 1,200 primary sample schools, 949 participated in the Base-Year Survey, 21 had no senior students enrolled and 230 either refused to participate or could not participate due to the fact that the request was received too late in the school year. However, 121 back-up schools participated bringing the total number of participating base-year schools to 1,070 and a total of approximately 18,000 respondents who provided base-year information.

Due to the fact that some schools could not respond to the Base-Year Survey, further attempts were made to secure participation of the 230 non-participant primary sample schools. This "resurvey" activity, performed during the First Follow-Up Survey, involved securing school cooperation and selecting samples of up to 18 former students (1972 seniors) per school. The "resurvey" activities were successful in 204 of the 230 primary sample schools; thus, students from 1,153 of the 1,200 primary sample schools were included in the First Follow-Up Survey. Adding 131 back-up schools and 16 sample augmentation schools increased the total number of participant schools to 1,300. Respondents to the First Follow-Up Survey returned 21,350 First Follow-Up Questionnaires.

B. Instruments

1. Base-Year Instrumentation

Each student in the sample was asked to complete a Student Questionnaire containing 104 questions distributed over 11 major sections. The Base-Year Student Questionnaire dealt with factors related to the student's personal-family background, educational and work experiences, plans, aspirations, attitudes, and opinions.

In addition to the Student Questionnaire, each student was asked to take a 69-minute Test Battery measuring both verbal and non-verbal ability. The test battery consisted of six tests. They were Vocabulary, Picture Number (measure of associative ability), Reading, Letter Groups (measure of inductive reasoning), Mathematics, and Mosaic Comparisons (measure of perceptual speed and accuracy).

Base-year data were also obtained from a student's School Record Information Form (SRIF). Items on the SRIF pertained to the student's high school curriculum, grade-point average, credit hours in major courses, and, if applicable, his or her position in ability groupings, participation in remedial programs, involvment in certain federally supported programs, and scores on standardized tests.

The administration of a School Questionnaire and a Counselor Questionnaire to the appropriate school staff completed the base-year data collection from each participating high school. These two instruments were designed to collect detailed data on teacher, school, and counselor characteristics.

2. First Follow-Up Instruments

Two forms (A and B) of a First Follow-Up Questionnaire were developed and designed for self-administration by the student. Form A of the First Follow-Up Questionnaire was mailed to each sample member who responded to the Base-Year Questionnaire. Seniors from the high school class of 1972 who were unable to participate in the Base-Year Survey (usually because of time and scheduling considerations) were mailed Form B of the questionnaire. Questions 1-85 were identical on both questionnaire forms, and dealt with information concerning the respondent's activity state (e.g., education, work, etc.) in October 1972 and October 1973; his or her socioeconomic status; work and educational experiences since leaving high school; and future educational and career plans, aspirations, and expectations. Form B of the First Follow-Up Questionnaire contained an additional 14 questions to take the place of missing base-year information.

Most of the questions on the Base-Year and First Follow-Up Questionnaires were of the forced-choice type. Open-ended, or free-response,

questions were limited to questions involving dates, income, number of hours or weeks worked, and the like. All questions were carefully constructed and formated by specialists in instrument design and extensively field tested.

C. Data Collection Procedures

1. Base-Year Data Collection

The bulk of the student data was collected in April, May, and June 1972 through group administration in each school by local school-based survey administrators. They also completed School Record Information Forms (SRIF's) for each participating student, and administered the School and Counselor Questionnaires.

2. First Follow-Up Data Collection

The first step in data collection involved an extensive tracing operation to update name and address files. The major mailout of over 22,000 First Follow-Up Questionnaires to the last known addresses of potential respondents was made on 23-24 October 1973. This was followed by a planned sequence of reminder postcards, additional questionnaire mailings, and reminder mailgrams to non-respondents. Active mail return efforts continued through December 1973; and by early January 1974, the questionnaire return rate by mail was 62 percent.

The names and addresses of over 8,000 sample members who failed to mail back their questionnaires were then turned over to the Bureau of the Census for personal interview in accordance with a Bureau contract with the U. S. Office of Education. This personal interview phase of first follow-up data collection continued through March 1974, at which time the overall response rate was increased to 94 percent.

D. Data Processing

The data were manually edited and then keyed to tape after which they were extensively machine edited. The editing process was extremely complex and comprehensive. The editing rules had to reflect the complexity of the instruments in terms of, for example, skip patterns within the questionnaires. In addition, hard copy resolution was conducted whenever

possible in order to resolve problems in the data file. The underlying logic of the whole editing process was to create a data file that was as faithful to the hard copy as possible. Some "cleaning" of the data file is still continuing.

SELECTED RESULTS

The Base-Year and the First Follow-Up Surveys together provided a data base for cross-sectional and longitudinal analyses. Several analyses of each type have been conducted. The results are presented in reports or documents as included in the reference list. Some of the interesting findings are summarized in this paper. The major themes are profiles of the senior class of 1972, their educational and vocational activities in October 1973, plan fulfillment, and activity transitions from October 1972 to October 1973.

It should be reiterated that this paper is only a summary; thus, a lot of details such as tables and figures are not included here. Readers who are interested in specific details or methods employed in the analyses should refer to reports as listed in the references.

A. Findings from Cross-Sectional Analyses

1. The Base-Year Survey Results

Weighted percentages for responses to each question in the Base-Year Student Questionniare were computed for the total group and separate subgroups stratified by sex, race, high school program, and socio-economic status (SES). Students who described themselves as Mexican-American or Chicano, Puerto Rican, or other Latin American were excluded from the classification "white." High school program was defined by three categories: general, academic, and vocational-technical programs. The socio-economic status (SES) of a student was indicated by his or her father's education. Students whose fathers did not graduate from high school were referred to as "low SES" students and those whose fathers graduated from college as "high SES" students.

The percentages for responses to each item in the student questionnaire are presented in the Tabular Summary of Student Questionnaire Data (Thompson, 1974). Concise, simplified, one-way tabulations of response percentages are contained in the Student Questionnaire and Test Results by Sex, High School Program, Ethnic Category, and Father's Education (Fetters, 1975). Some interesting findings are summarized below:

Grades. Females received better grades in high school than males, but they also tended to spend more time on homework. About 60 percent of the females, but only about 41 percent of the males, reported grade averages of "B" (80-84) or better. About 44 percent of the females reported spending at least five hours per week on homework, whereas only 26 percent of the males reported spending this much time. By high school curriculum classification, only 36 percent of students in vocational-technical programs, as contrasted to 69 percent of academic students, reported they had a high school grade average of "B" or better. Only 27 percent of the vocational-technical students spent at least five hours a week on homework. Blacks reported lower school grades; only 34 percent (versus 52 percent of whites) indicated a "B" or better average. However, more blacks than whites (40 versus 34 percent) indicated they spent at least five hours per week on homework. By SES classification, 45 percent of low SES students, as contrasted to 64 percent of high SES counterparts, reported a high school grade average of "B" or better. Only 33 percent of the low SES students spent at least five hours a week on homework as contrasted to 41 percent of the high SES students.

Work. Slightly over three-fourths of the class of 1972 worked during their senior year. About 44 percent of employed males and 29 percent of employed females worked at least 20 hours per week. Just over one-third of those who worked felt their job lead to work they would like to do in the future. The difference was more evident between academic and vocational-technical students. Thirty-seven percent of vocational-technical students versus 21 percent of academic students spent at least 20 hours a week working at jobs. Employed vocational-technical students tended to work mostly during the week while employed academic students worked mostly during weekends.

Factors Interferring with Study. The students were asked to indicate factors that interferred with their high school education. The students blamed their own "poor study habits" more often than any other factor; 65 percent of male students and 49 percent of female students cited this factor. The other four factors most frequently cited were "school doesn't offer the courses I want to take" (51 percent), "poor teaching" (50 percent), "teachers don't help me enough" (49 percent), and "courses are too hard" (42 percent).

Job Importance. When it comes to selecting a job or a career, females gave relatively more stress to opportunities to be helpful to others and useful to society (64 versus 42 percent), opportunities to work with people rather than things (62 versus 36 percent), and meeting and working with friendly and sociable people (67 versus 47 percent). Both males and females gave emphasis to making a lot of money (16 percent females and 28 percent males) and the chance to be a leader (10 percent females and 22 percent males).

Extra-Curricular Activities. With regard to high school extra-curricular activities, more female students participated in such activities as (a) cheerleader (29 versus 5 percent); (b) debating, drama, band, or chorus (39 versus 27 percent); (c) school newspaper, magazine, yearbook, or annual (26 versus 15 percent); (d) school subject-matter clubs (31 versus 20 percent); and (e) vocational education clubs (29 versus 16 percent). Fewer female students, however, participated in athletic activities (31 versus 58 percent) or hobby clubs (13 versus 24 percent). Except for vocational education and hobby clubs, vocational-technical students did not participate in high school extra-curricular activities nearly as much as academic students. This was true for athletics (32 versus 53 percent); cheerleaders and similar activities (15 versus 20 percent); debating, drama, band, or chorus (22 versus 39 percent); scholastic honorary clubs (7 versus 25 percent); school newspaper, annual, or yearbook (15 versus 25 percent); school subject-matter clubs (23 versus 30 percent); and student council, government, or political clubs (12 versus 27 percent). By race classification, more blacks tended to participate in all types of extra-curricular activities, except for honorary clubs.

School Evaluation. Students were asked to rate their high school on a four-point scale (poor, fair, good, excellent). Of those who did rate their schools, over one-half marked "good" or "excellent" on nine of the ten items. The characteristic that received the lowest rating by far was "job placement of graduates." Only 29 percent of those expressing an opinion rated their schools as "good" or "excellent" in this respect.

Students tended to be less content with school practices in specific areas than they were with the more general school characteristics. Of the eight items presented, the greatest number of students (89 percent) expressed dissatisfaction with the amount of assistance given students needing help in such subject areas as math and reading. At least two-thirds of those expressing an opinion thought their schools should have placed "more emphasis on vocational and technical programs," offered more "practical work experience," and done more to help students "find jobs when they leave school."

Counseling Services. More than 99 percent of the students reported their schools had a guidance counselor. Only 6 percent said they had never needed to see a guidance counselor. Of the remaining 94 percent, 89 percent felt that they usually had access to a guidance counselor when they wanted or needed one, and 85 percent said the guidance counselor usually had the needed information. However, while 63 percent of the students expressing an opinion agreed with the statement that the "school provided me with conseling that will help me continue my education," only 38 percent agreed with a similar statement regarding help in finding employment. In general, blacks, low SES, and vocational-technical students reported greater help from school counseling than their corresponding counterparts.

Study Plans. Almost 50 percent of the students thought that attending college would account for the largest share of their time during the year after high school and another 9 percent believed that attending a trade or business school would be their predominant activity. About 13 percent of vocational-technical students (versus 76 percent of academic students) indicated they planned to go to a four-year college or university. Fewer low SES students than the high SES students planned to go to college. Their corresponding percentages were 35 and 77, respectively.

Financial Aid Plans. About 41 percent of all seniors, but only 29 percent of the blacks, agreed that "my parents or I will be able to pay for more education without getting any financial aid." Almost equal numbers of students planned to use each of the following three fund sources for further study beyond high school: "Regular bank loan" (22 percent), "college or university scholarship or loan" (21 percent), and "state or local scholarship or loan program" (20 percent). About 17 percent planned to use College Work-Study Program funds, and 10 percent planned to use scholarships from private organizations or companies. Thirteen other possible sources of program funds mentioned in the Student Questionnaire were cited by 9 percent or less of the reporting seniors. Many students felt, however, that they did not know enough about some of these programs to answer the question. This was the case for about one-fourth of the seniors with regard to each of the following five programs: Federal Guaranteed Student Loan Program, Educational Opportunity Grant Program, Health Professions Student Loan Program, Health Professions Scholarship Program, and National Defense (Direct) Student Loan Program.

Choice of College. In the choice of a college, the "availability of financial aid" and "college expenses" were cited by the majority of blacks as being "very important" reasons. Their respective percentages are 64 and 56. The "availability of specific courses or curriculums" was reported to be "very important" by most students regardless of race (62 percent whites and 61 percent blacks).

Locus of Control. Blacks felt they had less control over their environment. For example, more blacks thought that "Good luck is more important than hard work for success" (18 versus 8 percent for whites) and more agreed that "Everytime I try to get ahead, something or somebody stops me" (31 versus 19 percent). Similarly, more low SES and more vocational-technical students revealed a poorer sense of control over their environments than their corresponding counterparts.

2. The First Follow-Up Survey Results

The following estimates were derived from responses to some critical questionnaire items provided by the First Follow-Up Survey sample members. The estimates (i.e., percentages) were based upon

simple unweighted tabulations. They are the best available from the NCS data file as of early spring 1975. Continuing analyses using the sample weights may slightly change the estimates reported in this paper.

It should be noted that the SES variable is different from the one used in the base year. It is a derived index from a composite score involving five components. The components are: (1) father's education, (2) mother's education, (3) parents' income, (4) father's occupation, and (5) household item index. The high, middle, and low SES categories correspond to the upper quartile, middle two quartiles, and lower quartile of the composite score, respectively. Another classification variable used in the First Follow-Up data analysis is the ability index. This index was derived from a composite score which is a simple sum of standard scores of Vocabulary, Letter Groups, Mathematics, and Reading Tests. The high, middle, and low ability categories correspond to the upper quartile, middle two quartiles, and lower quartile of the scores, respectively.

Activity Status in the Fall of 1973. For the total group, slightly over 64 percent of the young adults were working for pay full time or part time in the fall of 1973. More males than females were working. This difference was especially evident between male and female Spanish Americans (Mexican-American or Chicano, Puerto Rican, and other Latin American origin). The difference was about 9 percent. Ability was another factor relating to work activity. While about 70 percent of the low ability members were working for pay, only about 55 percent of the high ability members were working. Within the low ability and the middle ability categories, a greater percentage of whites than blacks were working (the difference being 15 percent). As expected, members in vocational-technical high school programs were more likely to be engaged in work than those in academic programs. These differences could partly reflect the fact that more high ability young adults and more participants in academic programs went to college. No substantial differences among regions are evident; the North Central region had a slightly higher percentage of workers.

The second most frequently indicated activity in the fall of 1973 was taking academic courses at a two- or four-year college (about 42 percent for the total group). Males, whites, high ability members, high

SES members, academic high school program participants, and members residing in the Northeast had a higher percentage in academic study than their corresponding counterparts. Surprisingly, 14 percent of vocational-technical and 28 percent of general students were taking academic courses at two- or four-year colleges.

The difference between black females and white females in college-going rates was much smaller (40 percent versus 37 percent) than the difference between black males and white males (46 percent versus 32 percent). This finding is in agreement with previous research that indicates black males have more motivational and achievement problems than black females.

One of the most interesting findings is that, within each of the three ability levels, blacks have a significantly higher college attendance rate than whites. The contrasts are 25 percent versus 14 percent, 54 percent versus 38 percent, and 83 percent versus 70 percent for the low, middle, and high ability groups, respectively, with the first percentages in the contrast representing black attendance rates. The same trend was also evident for black and white differences for the low and middle SES categories.

About 10 percent of the males were in the Armed Forces as contrasted to about 1 percent of females. Blacks, low SES and low ability group members had a greater probability of being in the Armed Forces as contrasted to whites and the higher SES and higher ability group members.

Approximately 9 percent of these seniors were on temporary layoff, looking for work, or waiting to report to work. Sex differences between their status were small (less than 1 percent). However, there were large differences between ability groups, SES groups, and racial groups. Thirteen percent of the low ability group as contrasted to less than 5 percent of the high ability group were unemployed. SES showed the same relationship with over 12 percent of the low SES respondents being unemployed and only slightly over 5 percent of the high SES respondents being unemployed. Blacks had a 16 percent unemployment rate, while whites had a 7 percent unemployment rate. Some of these differences,

however, could be due to the fact that high ability, high SES, and white respondents were out of the labor market because they were more likely to be going to school.

Marriage and Family Planning. About 17 percent of the 1972 high school senior class were married at the time of the First Follow-Up Survey, and an additional 12 percent of them planned to get married within a year. Approximately 24 percent of the females were married as contrasted to nearly 11 percent of the males. These overall sex differences are in agreement with the fact that females tend to get married at an earlier age than males. The percentages of being married were 24, 17, and 8 for the low, middle, and high ability groups, respectively. This trend was also true for SES groups, i.e., higher SES members had a lower probability of being married than lower SES members. The percentage of married respondents was highest in the South (about 24 percent), and lowest in the Northeast (about 10 percent). Further examination revealed that Spanish American females, females in low ability and low SES groups, and females enrolled in high school vocational-technical programs had the highest probability of being married. The corresponding percentages were 28, 31, 32, and 33, respectively. The groups with the lowest probability of being married were high ability males (4 percent), high SES males (4 percent), and high ability blacks (5 percent).

Among those married, about 29 percent indicated having children as of October 1973. Most of those having children had only one child (90 percent). The percentage of those having children among married blacks was 50 as contrasted to 25 percent for married whites. Married low ability members and low SES members were more likely to have children than married higher ability and higher SES members. For example, about 33 percent of married low SES members indicated having children, while only 18 percent of married high SES members indicated having children. The differences among SES groups in this respect were particularly evident among blacks. While about 52 percent of married low SES blacks had children, the corresponding percentage for married high SES blacks was only 35 percent.

The sample members were also asked how many children they eventually expect to have. The most frequently indicated answer was two children (51 percent). The next most frequent answer was three (22 percent).

Slightly over 11 percent indicated four or more children. About 11 percent indicated they didn't expect to have children. Surprisingly, this general trend was consistent across subgroups.

Educational Expectations. It is interesting to note that over 18 percent of the low ability members expected to get a college or higher degree, an expectation which seems quite unrealistic. In fact, another 42 percent expected to go either to a two-year college or vocational-technical school. In addition, both black females and black males had higher expectations in regard to postsecondary education than their white counterparts. Approximately 90 percent of middle ability blacks expected to go beyond high school as contrasted to 72 percent of middle ability whites. Over 28 percent of the middle ability blacks expected to get a Master's or Ph.D. degree in comparison with about 10 percent of middle ability whites. How realistic these plans are is yet to be determined. Even 76 percent of the low SES blacks expected to go beyond high school as contrasted to 52 percent of the low SES whites.

Life Goals. Sex, race, ability, and SES appeared to be important factors relating to life goals. In general, males were more work-oriented while females were more family-oriented. For example, more males than females gave a "very important" rating to items such as "being successful in my line of work," "having lots of money," "being able to find steady work," and "having leisure time to enjoy my own interests"; while more females gave a "very important" rating to "finding the right person to marry" and "living close to parents or relatives." Race differences were quite prominent. Relatively more blacks than whites gave a "very important" rating to items such as "having lots of money," "being able to find steady work," "giving my children better opportunities than I have had," and "working to correct socio-economic inequalities." The differences among ability groups as well as SES groups were also quite noticeable. A much larger percentage of lower ability members compared to higher ability members gave "very important" ratings to "being successful," "having lots of money," and "giving my children better opportunities."

Reasons for not Continuing Education. Those sample members who did not continue their education after high school were asked to give reasons.

Several frequently cited reasons were related to financial problems. For example, about 68 percent of these members indicated they wanted to earn money for themselves; 35 percent indicated that they could not afford a four-year college or university education; and about 34 percent indicated they needed to earn money before they could pay for further education. Wanting to earn money for oneself might not necessarily reflect actual financial need because the percentage of high SES and low SES members who gave this reason were identical (67 percent). However, group differences were evident in respect to financial capability. About 41 percent of the non-school-going low SES members indicated they could not afford a college education as contrasted to 30 percent of the high SES group members. While about 47 percent of blacks indicated being unable to afford a college education, only about 32 percent of whites so indicated.

Type of Postsecondary Institution. Of those who studied in October 1973, about 59 percent were in four-year colleges or universities, and approximately 28 percent were in two-year colleges. Race differences were evident. About 60 percent of white students were in four-year colleges or universities, as contrasted to 57 percent of blacks and 41 percent of Spanish Americans. Spanish Americans had the highest percentage in two-year colleges (46 percent versus 25 percent of blacks and 27 percent of whites). The West had a large percentage of students in two-year colleges (about 47 percent as compared to about 23 percent for the rest of the country). This may be due to the fact that there are more two-year colleges in the West and that, consequently, more students take advantage of them.

Seventy-seven percent of the students were in public institutions and 23 percent were in private institutions. Slightly more females, whites, high ability, and high SES students were in private institutions as contrasted to males, Spanish Americans, low ability and low SES students.

Full-Time Versus Part-Time Study. Of those who studied in October 1973, about 89 percent were studying full time. There were no substantial sex and racial differences. However, more high ability students were studying full time. The percentage was 94 as contrasted to 78 percent for low ability students. Likewise, more high SES students were studying

full time than low SES students. Part of these ability and SES differences could be due to the fact that more high ability and high SES students are in four-year colleges and students attending four-year colleges are more likely to be full-time students.

Field of Study. The students in October 1973 were further classified according to their fields of study. In the academic fields, there was an obvious difference between males and females. Males were more likely to be in the fields of business, engineering and physical sciences while females were more likely to be in the fields of education, humanities, fine arts, home economics, and nursing. Whites were more likely to be in engineering, the humanities, and the fine arts in contrast to blacks and Spanish Americans. High ability members were more likely than low ability members to be in the biological sciences, humanities, fine arts, and physical sciences. The trend for SES groupings was similar to that for ability groupings.

In the vocational areas, there was again the expected large sex difference. For example, about 11 percent of male students were studying mechanics and engineering as contrasted to only about 0.3 percent for females in these fields. On the other hand, about 9 percent of the females were in the office and clerical fields as contrasted to only about 1 percent of the males.

Satisfaction with Postsecondary Education. When the students were asked how satisfied they were in their education and training since leaving high school, most of them replied that they were "satisfied" or "very satisfied" in regard to intellectual development (about 81 percent), development of work skills (about 76 percent), and quality of teachers (about 73 percent). The students were less satisfied with the amount of money they had with which to get along. In this case, about 40 percent of the students indicated "satisfied," and about 17 percent indicated "very satisfied." The degree of satisfaction with education or training was similar across subgroups, with only a small range of fluctuations.

Satisfaction with Jobs. The majority of the working young adults were satisfied with their jobs in respect to pay and fringe benefits (70 percent), importance and challenge (70 percent), working conditions (80 percent), and the job as a whole (78 percent). They were somewhat less

satisfied with the opportunity for developing new skills (65 percent) and the opportunity for promotion (60 percent). Group differences were not large except for importance and challenge, promotion, and the development of new skills for which high ability members expressed less satisfaction than low ability members.

When asked whether they expected to be working at the same kind of job or occupation in October 1974, about 44 percent of working young adults indicated no. About 47 percent of black males and 51 percent of black females expected to change jobs as contrasted to 44 percent of white males and 40 percent of white females. There was as high a percentage of high ability members as there were low ability members indicating an expected job change (about 45 percent). A greater percentage of young adults who had been in academic high school programs expected to change jobs, possibly due to the fact that more of them were in college and were working part time to subsidize their educational expenses.

Relevancy of High School Job Training. About 29 percent of the total group indicated that they received specialized job training intended to prepare them for immediate employment upon leaving high school. The percentage of females receiving such training was higher than for males (37 percent versus 20 percent). The percentage was also higher for minority groups (35 percent of the blacks and 33 percent of the Spanish Americans) than for whites (28 percent) and those who could be categorized as low ability or low SES (37 percent and 38 percent, respectively) relative to those who could be categorized as high ability or high SES (15 percent for both groups).

Of those students who received specialized job training in high school, about 59 percent indicated that they were currently working in a job where the training was useful, and about 25 percent indicated that they were not using the training, and 17 percent indicated that they never looked for work where the training could be used. More females than males claimed to have used their training (62 percent versus 51 percent). A greater percentage of the high ability females as compared to low ability females used the training (67 and 53 percent, respectively). This trend, however, was different for males. A greater percentage of

males in the middle ability group tended to use their training. Whites were more likely to use their training as compared to blacks (61 percent versus 47 percent). In addition, those students who were in vocational-techincal programs tended to use their training more often than those in other high school programs (63, 52, and 58 percent for vocational-technical, general, and academic students, respectively).

Of those who found jobs in which they could expect to use their high school training, most were favorable in their reported reactions to this training. For example, 72 percent of those young people indicated that they had been able to apply almost everything they learned in their high school job training; 86 percent said that they had been able to apply the basic principles of their training although some things were different; only 32 percent claimed that their training was different from the way it was done on the job; and only 32 percent reported that they could have gotten their job without the training. Furthermore, when asked if they considered the training as a wise choice, 88 percent of those who received training felt that the training was a wise choice.

B. Findings from Longitudinal Analysis

In the previous section, students' plans in the spring of 1972 and activity states in the fall of 1973 were examined independently. While the information thus obtained is interesting in itself, its value would be increased when the two sets of data are examined jointly. In other words, longitudinal analyses using the data collected at two points in time would reveal additional information of students' attainment process. In this section, two sets of the preliminary findings from such longitudinal analyses are summarized.

1. Spring 1972 Plans versus October 1972 Activities (Plan Fulfillment)

Eighty-two percent of respondents who planned in the spring of 1972 to go to a four-year college were enrolled in that status in October of 1972. Over 9 percent were enrolled part or full time in a two-year college or vocational-technical school, and less than 4 percent of this group ended up working full time.

The plans for those seniors who planned to go to a two-year college or a vocational-technical school had a much lower probability of being

fulfilled. About 64 percent of those planning to go to a two-year college actually went and only 50 percent of those planning to go to a vocational-technical school actually went by October 1972. A substantial proportion (28 percent) of those planning to work full time couldn't find work, got married (if female), went in the military, or went to school.

The plans for working part time, on-the-job training, military, homemaker, and other plans (e.g., travel) also had a similar low probability of being fulfilled. The majority of individuals with these plans actually ended up working full time only.

The probability of fulfilling plans was further examined for subgroups stratified by background variables such as sex, race, socioeconomic status (SES), ability, high school programs and region. It was evident that these background variables are substantially related to the fulfillment of plans. Some of the relationships are summarized below.

Relationship of Ability to Plan Fulfillment. The plans for low ability respondents were considerably less fulfilled than the plans for high ability respondents. Only 60 percent of low ability seniors who planned to go to a four-year college actually were enrolled as such in October 1972, while 88 percent of high ability students fulfilled these same plans. We might have expected the plans of those low ability respondents who wanted to go to a two-year college or vocational-technical school to have a reasonable probability of being fulfilled. However, this is not even the case as only 55 percent of those planning on attending a two-year college actually did and only 40 percent of those planning on attending a vocational-technical school actually did. The corresponding percentages for the high ability group were 66 and 56 percent, respectively. There seem to be rather clear-cut implications here for the guidance function and program planning in high school. The higher ability respondents seem to be able to plan more realistically, at least in respect to early activities.

Relationship of Socioeconomic Status to Plan Fulfillment. The correspondence between plans and activities for each of the three SES levels followed the same trend as the ability results discussed previously.

For high SES respondents, 88 percent of those planning on going to a four-year college fulfilled these plans, while the corresponding percentages for the middle and low SES groups were 80 and 72 percent, respectively. The same pattern of differences between the three SES groups were found for those planning on attending a two-year college. The percentages were 69, 63, and 60 for the high, middle, and low SES, respectively.

There were no major differences between the middle and low SES groups in regard to fulfilling work plans. Those high SES respondents planning to work full time in October 1972 were more likely to end up in school (27 percent) than their low SES counterparts (14 percent). The percentage of going in a four-year college was also higher for those high SES respondents with other plans than the middle SES and the low SES respondents with similar plans.

Relationship of Race to Plan Fulfillment. Blacks were less likely to fulfill their study and work plans compared to whites. Seventy-four percent of blacks planning on going to a four-year college and 41 percent of blacks planning on working full time fulfilled their plans. The corresponding percentages for whites were 83 and 64 percent, a considerable difference. Blacks were also substantially less likely than whites to fulfill their plans for attending both two-year colleges or vocational-technical schools. Twenty-four percent of blacks (versus 11 percent of whites) who planned to work full time were actually doing something else besides either working or studying.

Relationship of Sex to Plan Fulfillment. Sex differences in plan fulfillment were not as great as differences between racial, ability, or SES groups. Females were more likely to fulfill their plans for vocational-technical training (54 percent versus 44 percent) and somewhat less likely to fulfill their plans for working full time in October 1972 (58 percent versus 66 percent). Fourty-eight percent of females planning to be homemakers only actually were in October 1972.

Relationship of High School Program to Plan Fulfillment. Students who were in high school academic programs were most likely to fulfill their four-year college plans (85 percent), while vocational-technical

students were least likely to fulfill their four-year college plans (58 percent). Academic students were most likely to fulfill their plans for attending a two-year college (66 percent), while vocational-technical students were again least likely (57 percent). Academic students were even more likely to fulfill their plans for attending vocational-technical schools (63 percent), and general program students were least likely (41 percent) as compared to 49 percent of vocational-technical students. Vocational-technical students were, however, more likely to fulfill their working full-time plans (66 percent), and academic students were least likely (56 percent) to fulfill their work plans.

It must be kept in mind, however, that the vocational-technical programs have a relatively high proportion of low SES and low ability students. We have just seen that these characteristics are significantly related to plan fulfillment. Before any tentative conclusions are drawn with respect to program influences on planning, one would have to adjust for background differences such as these, as well as local economic conditions.

Relationship of Region to Plan Fulfillment. There were some regional differences in regard to fulfilling short-term occupational and educational career plans. Respondents residing in the Northeast were most likely to fulfill their four-year college plans, and respondents residing in the South were least likely to fulfill these plans. Their corresponding percentages were 84 and 80, respectively. Seniors planning to work full time were more likely to fulfill these plans if they were seniors in the Northeast (66 percent). They were least likely to fulfill their work plans if they finished high school in the West (52 percent). These differences in the fulfillment of plans across the four regions could be due to a number of sources. First, there was clearly an SES difference among these regions, and this factor, as we have seen, was strongly related to the fulfillment of plans. There were also certainly overall differences in economic conditions, industrial development patterns, and the availability and type of postsecondary institutions.

2. October 1972 Activities versus October 1973 Activities (Activity State Transitions)

Overall, 81 percent of those students enrolled in a four-year college in October 1972 were in the same status in October 1973. The corresponding percentages for two-year college students and vocational-technical students are 64 and 37 percent, respectively. The lower persistence percentage for two-year college and vocational-technical students could be due to the fact that some students might be in a one-year program. A large percent of students in two-year college and vocational-technical school in October 1972 went to work full-time in October 1973. Seventy-five percent of those working full time in October 1972 were also working full time in October 1973, but 12 percent of those working full time in October 1972 were going to school in October 1973.

When the activity state transition patterns were examined within subgroups stratified by background variables, they revealed some evident relationships between background variables and activity state transitions. The relationships are summarized as follows:

Relationship of Ability to Activity State Transitions. The highest dropout rate for all three types of institutions is, as expected, for the low ability group. However, it is surprising that the dropout rate from four-year colleges is only 29 percent for this group. Low ability students who were working full time in October 1972 were most likely to be working full time in October 1973 (80 percent), while high ability students who were working full time in October 1972 were least likely to be working full time in October 1973 (63 percent). A substantial percentage of the high ability groups who were working full time in October 1972 were going to some type of school full or part time in October 1973 (25 percent versus 7 percent of the low ability group).

Relationship of SES to Activity State Transitions. SES has about the same relationship as ability in regard to continuance in a four-year college full time. The continuance rates are 85, 79, and 75 percent, respectively, for high, middle, and low SES groups. Like ability, a

considerable proportion of high SES individuals work full time their first year out of high school and then go to college (25 percent). The corresponding percentages for middle and low SES were 13 and 8 percent, respectively. The relationship of SES to continuation in full-time work status was similar to that found for ability. That is, 77 percent of low SES full-time workers in October 1972 were in the same status in October 1973. Another 15 percent who worked full time in October 1972 were either working part time, looking for work, in the military, or--in the case of females--married and not working.

Relationship of Race to Activity State Transitions. The postsecondary school dropout rates for blacks and whites are not substantially different, although higher for blacks. For example, 16 percent of blacks in four-year college study in October 1972 left school completely as contrasted to 14 percent of whites in the same activity in October 1972. For those who worked only in October 1972, a slightly higher percent of blacks than whites ended up in a four-year college, but a slightly higher percent of whites than blacks ended up in a two-year college.

Relationship of Sex to Activity State Transitions. Both males and females have about the same persistence rates in regard to study in two- or four-year colleges (81 percent for males and 82 percent for females). However, the female persistence rate in vocational-technical schools is considerably less (30 percent versus 46 percent for males) due probably to the fact that females have more of a tendency to enroll in vocational courses of shorter duration (e.g., cosmetology, stenography, etc.). Females working full time in October 1972 are less likely than males to be working full time in October 1973 (70 percent versus 78 percent for males). This is probably to a large part due to females getting married and dropping out of the labor market.

Relationship of High School Programs to Activity State Transitions. Seniors who took an academic high school program had the highest persistence rates in regard to four-year college study (84 percent) while students who were in vocational programs had the lowest persistence rates in four-year colleges (64 percent). The corresponding persistence

rate for students who were in a general program was 75 percent. Respondents in an academic high school program were also more likely to persist in a two-year college full time as compared to participants in vocational or general programs. The same trend was also true in respect to vocational-technical programs. These differences in persistence could be due to at least three factors: differences in ability levels for the enrollees in the three types of programs, differences in skills necessary for the successful completion of college that are acquired in the three programs, and differences in SES distribution among the three programs. We should make these high school program comparisons after adjustment for the effects of SES, ability, and other important factors and see of there still is a relationship between type of program and persistence in college.

Academic students who were working full time in October 1972 were more likely to be in other activity states in October 1973 (38 percent) as contrasted to vocational students where 21 percent were in different activity states.

Relationship of Region to Activity State Transitions. There were significant differences among the four regions in respect to transition matrices. Persistence rates in four-year colleges tended to be highest among respondents from high schools in the Northeast (85 percent) and lowest in the West (78 percent). Work persistence was highest in the South (77 percent) and lowest in the West (68 percent). As noted previously, there are differences among these regions in respect to ability, socioeconomic status, as well as educational and occupational opportunities. These differences among regions could certainly explain many of the differences between the regional transition matrices.

PLANS FOR DATA SUMMARY AND ANALYSIS

We have summarized some information on short-term plans and short-term attainment. We have also seen that the fulfillment of plans and the persistence in certain activity states are highly related to the person's background characteristics. Many of these findings are expected, and many others have been repeatedly mentioned throughout the years in the research literature. What makes these data especially important is that rather precise population estimates of both proportions and absolute numbers can be ascertained. The estimated proportions and absolute numbers have policy implications for program planning at the high school, postsecondary school, and the private and public industry sectors of the economy. They estimate the short-range flow of high school seniors through the educational and occupational structure from original planning states through activity state status roughly one and one-half years out of high school. Just as important, many of the subgroups that we have been discussing can be regarded as target groups or special interest groups to be followed up with more detailed and refined analysis. For example, we have seen that a number of background variables were substantially related to the fulfillment of plans. The next step is to further characterize and contrast those groups whose plans were not realized, especially in respect to policy-oriented factors such as knowledge of and participation in financial aid plans, and high school experiences including counseling services and vocational training. We shall also want to look at the impact of plan non-fulfillment on goals, expectations, future activities, and satisfaction. Similarily, from the activity-state transition analysis many interesting subgroups can be identified, and further examination of these groups will yield more useful information. In particular, it should be interesting to examine the role of financial problems for the low SES group dropping out of postsecondary schools, and to compare the low ability dropouts with those low ability students remaining in colleges in terms of their psychological attributes and future career paths.

We are now in various stages of progress in the preparation of special reports. Some of these reports will cover in more detail and

depth the transition analyses discussed briefly here. Other reports will be aimed specifically at the impact of financial aid, the influence of high school experiences, the prediction of activity state attainment and transitions, profiles of activity subgroups, factors relating to career attainment process, and demand of and access for postsecondary education.

Future analysis plans call for modeling the educational and occupational flow of 1972 high school seniors by constructing and analyzing rather elaborate path models of this process. In this way, the interplay and roles of various personal background factors, high school experiences, postsecondary school experiences, and federal programs can be estimated.

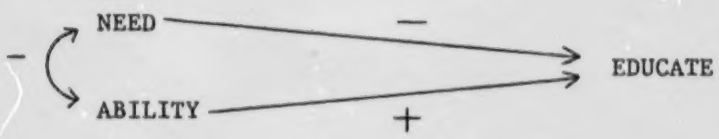
The logic implied in a simple path analysis model involving financial aid will be useful to present here for illustrating how the impact of a factor can be evaluated. The first step would be to examine the simple relationship between a student's lack of financial resources for continuing education or training beyond high school (NEED) and his activity state in either October 1972 or 1973 (EDUCATE). Without consideration of federal or other intervening variables, we would anticipate a negative relationship:

NEED $\xrightarrow{-}$ EDUCATE

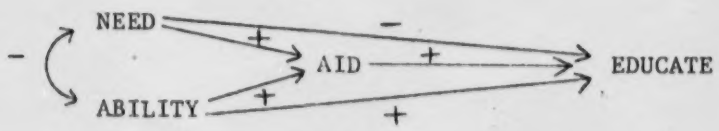
That is, students with high NEED scores would be less likely to be enrolled in educational or training programs in either time period.

The critical question in this analysis is whether the introduction of financial aid in the model would tend to lower the observed direct negative effect of NEED on EDUCATE. However, before taking this step, we should rule out (by controlling for) an alternative explanation for the NEED-EDUCATE relationship. This is the confounding effects of one's measured ability as based on past performance (ABILITY). Ability (which is presumed to be a partial measure of one's potential to succeed) often is used as a criterion for getting financial assistance, as well as for admission to various educational and training programs. It also quite probably is negatively associated with NEED (the relationship between

SES and ability generally being found to be positive). Thus, the indirect paths between NEED, ABILITY, and EDUCATE could be accounting for a substantial part of the simple NEED-EDUCATE relationship. In other words, to examine properly the effects of financial aid or similar programs, it obviously would be desirable to control for ability. Therefore, the second step of the analysis would be designed to obtain path coefficients which consider NEED and ABILITY as exogenous variables (independent variables) and EDUCATE as the endogenous variable (dependent variable).



Having isolated the effects of ability, we would then introduce our measure of economic assistance (AID) as an intervening endogenous variable which might simply be a dichotomous variable that would distinguish the users and non-users of financial aid programs.



If financial aid programs are operating as intended, we should obtain significant and positive paths between NEED and AID and between AID and EDUCATE for both time periods. Moreover, the direct (negative) path coefficient between NEED and EDUCATE in this model should be smaller than that which we expect to find in the second model. If such results, in fact, are obtained, we would have an easily interpretable and direct estimate of the effects of financial aid programs. In the ideal case of a completely effective AID program, the direct path coefficient between NEED and EDUCATE would be zero, and the direct paths between NEED and AID and between AID and EDUCATE would be large.

Of course, the model could be expanded to include other aspects of the general problem, such as a student's postsecondary school plans and

goals or his knowledge of funding sources. However, even in its basic form, the model would yield useful information, especially if replicated for specific subpopulations such as white males, white females, black males, and black females, and thereby producing a comparison of the relative effects of financial assistance for each of these groups.

Path analysis as illustrated above is only one of the analysis models that can be applied to the NLS data. Other statistical models such as multivariate analysis and commonality analysis are also under examination. The ultimate goal of data summary and analysis is to synthesize the data to gain a deeper understanding of the developmental process of the young adults, and provide useful and valuable information for educators and policymakers.

To supplement the general analysis work planned by the Research Triangle Institute, the National Center for Education Statistics has requested proposals from professionally qualified individuals and organizations to carry out special policy-oriented analyses in the following specific areas: access to postsecondary education, demand for postsecondary education, student financial aid, impact of secondary school, and transition from high school to work. As many as five contract awards will be made for this purpose this fiscal year.

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